UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS P.O. Rey 1450

P O Box 1450 Alexandria, Virgima 22313-1450 www.uspto.gov

DATE MAILED: 08/04/2008

NOTICE OF ALLOWANCE AND FEE(S) DUE

23373 7590 08/04/2008 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800

WASHINGTON DC 20037

EXAMINER					
MISLEH, JUSTIN P					
ART UNIT	PAPER NUMBER				

 APPLICATION NO.
 FILNO DATE
 FIRST NAMED INVENTOR
 ATTORNEY DOCKET NO.
 CONFRMATION NO.

 10/699,795
 11/04/2003
 Nereo Pallaro
 Q78233
 3993

TITLE OF INVENTION: MULTIFUNCTIONAL INTEGRATED VISUAL SYSTEM WITH CMOS OR CCD TECHNOLOGY MATRIX

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0	\$1740	11/04/2008

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FFE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450

or Fax (571)-273-2885

appropriate. All further indicated unless correcte maintenance fee notifical	correspondence includir ed below or directed oth	or transmitting the 1880 ig the Patent, advance of herwise in Block 1, by (rders and notification of r a) specifying a new corres	naintenance fees wi pondence address;	ed). Blocks II be mailed and/or (b) in	to the current dicating a separ	ould be completed where correspondence address as ate "FEE ADDRESS" for
		ock 1 for any change of address)	Note Feet paps	e: A certificate of n s) Transmittal. This ers. Each additional	certificate co paper, such	only be used for annot be used for as an assignmen	domestic mailings of the or any other accompanying at or formal drawing, must
SUITE 800	VANIA AVENUE			Conti	ficate of Ma	ilina or Troper	
WASHINGTON	I, DC 20037						(Depositor's name)
							(Signature)
							(Date)
APPLICATION NO.	FILING DATE		FIRST NAMED INVENTOR		ATTORNEY I	OOCKET NO.	CONFIRMATION NO.
10/699,795 TITLE OF INVENTION	11/04/2003 : MULTIFUNCTIONAI	LINTEGRATED VISUA	Nereo Pallaro LL SYSTEM WITH CMOS	OR CCD TECHNO	Q78 DLOGY MA		3993
APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE	FEE TOT	AL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1440	\$300	\$0		\$1740	11/04/2008
EXAM	INER	ART UNIT	CLASS-SUBCLASS]			
MISLEH,	JUSTIN P	2622	348-294000				
"Fee Address" ind. PTO/SB/47; Rev 03-0 Number is required. 3. ASSIGNEE NAME A	ondence address (or Cha 3/122) attached. ication (or "Fee Address 12 or more recent) attach ND RESIDENCE DATZ less an assignee is ident h in 37 CFR 3.11. Comp	nge of Correspondence "Indication form ed. Use of a Customer A TO BE PRINTED ON	2. For printing on the p (1) the names of a yet or agents OR, alternati (2) the name of a since 2 registered patent atto itsed, no name will be THE PATENT (print or ty) data will appear on the p TT a substitute for filing an (B) RESIDENCE: (CITY)	3 registered patent vely, e firm (having as a regent) and the name: rneys or agents. If no printed.	attorneys member a s of up to o name is e is identifie	23	cument has been filed for
Please check the appropri	iate assignee category or	categories (will not be p	rinted on the patent):	Individual Cor	poration or o	ther private gro	up entity 🗖 Government
4a. The following fee(s): Issue Fee Publication Fee (N	o small entity discount p		b. Payment of Fee(s): (Plea A check is enclosed. Payment by credit car The Director is hereby overpayment, to Depo	d. Form PTO-2038	is attached.		
	s SMALL ENTITY state	is. See 37 CFR 1.27.	b. Applicant is no lon				
NOTE: The Issue Fee and interest as shown by the i	d Publication Fee (if req records of the United Sta	uired) will not be accepte tes Patent and Trademark	ed from anyone other than t k Office.	he applicant; a regist	tered attorne	y or agent; or the	e assignee or other party in
Authorized Signature				Date			
Typed or printed name				Registration No			
This collection of inform an application. Confident submitting the complete this form and/or suggesti Box 1450, Alexandria, V Alexandria, Virginia 223	ation is required by 37 C tiality is governed by 35 d application form to the ons for reducing this but firginia 22313-1450. DC 13-1450.	FR 1.311. The informatic U.S.C. 122 and 37 CFR USPTO. Time will vary rden, should be sent to the ONOT SEND FEES OR	on is required to obtain or r 1.14. This collection is est depending upon the indiv the Chief Information Office COMPLETED FORMS TO	etain a benefit by the imated to take 12 m idual case. Any con er, U.S. Patent and T D THIS ADDRESS.	e public whice inutes to con nments on the rademark Of SEND TO:	ch is to file (and nplete, including e amount of tin fice, U.S. Depa Commissioner f	by the USPTO to process) g gathering, preparing, and the you require to complete rtment of Commerce, P.O. or Patents, P.O. Box 1450,

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE United States Patent and Trademark Office Address: COMMISSIONER FOR PATENTS

P O Box 1450
Alexandria, Virgima 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/699,795	11/04/2003	Nereo Pallaro	Q78233	3993		
23373	23373 7590 08/04/2008			EXAMINER		
SUGHRUE MI	ON, PLLC	MISLEH, JUSTIN P				
	VANIA AVENUE, N.W		ART UNIT	PAPER NUMBER		
SUITE 800 WASHINGTON, DC 20037			2622 DATE MAILED: 08/04/200	8		

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)

(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 734 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 734 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Application No. Applicant(s) 10/699 795 PALLARO ET AL. Notice of Allowability Examiner Art Unit JUSTIN P MISLEH 2622 -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--All claims being allowable. PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308. This communication is responsive to Amendment filed April 10, 2008. 2. X The allowed claim(s) is/are 1 - 7, 9, 10, 12 - 15, 17 - 23, 25, and 26 (now respectively renumbered 1 - 5, 7, 6, 8, 9, 13 - 15, 20, 16, 17, 21, 22, 10, 11, 18, 19, and 12). 3. Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). b) \(\subseteq \text{Some*} \) c) \(\subseteq \text{None} \) of the: 1. X Certified copies of the priority documents have been received. 2. Certified copies of the priority documents have been received in Application No. _____. 3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)). * Certified copies not received: . . Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. THIS THREE-MONTH PERIOD IS NOT EXTENDABLE. A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient. CORRECTED DRAWINGS (as "replacement sheets") must be submitted. (a) Including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached 1) hereto or 2) to Paper No./Mail Date (b) I including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d). 6. DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL. Attachment(s) 1. \(\sum \) Notice of References Cited (PTO-892) 5. Notice of Informal Patent Application Interview Summary (PTO-413), Notice of Draftperson's Patent Drawing Review (PTO-948) Paper No./Mail Date Information Disclosure Statements (PTO/SB/08). 7. X Examiner's Amendment/Comment Paper No./Mail Date

of Biological Material

4. T Examiner's Comment Regarding Requirement for Deposit

Other .

8. X Examiner's Statement of Reasons for Allowance

Application/Control Number: 10/699,795 Page 2

Art Unit: 2622

EXAMINER'S AMENDMENT

1. An Examiner's amendment to the record appears below. Should the changes and/or

additions be unacceptable to Applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the

payment of the issue fee.

2. Authorization for this Examiner's amendment was given in a telephone interview with

Brian Hannon on 28 July 2008.

The application has been amended as follows:

CLAIMS

Please cancel Claims 8, 11, 16, and 24.

Please $\underline{\text{replace}}$ remaining Claims 1 – 7, 9, 10, 12 – 15, 17 – 23, 25, and 26 with the

following:

"1. A visual system, comprising:

a CCD or CMOS matrix having a sensitive area, and

a plurality of optical devices with different directions, fields of view or modes of optical

separation,

wherein said sensitive area of the matrix is divided into a plurality of separated sub-areas

designed for different specific functions, a first part of said plurality of separated sub-areas being

dedicated to scene monitoring and a second part part of said plurality of separated sub-areas

being dedicated to detection of environmental parameters, said division being achieved by said

plurality of optical devices.

wherein a fog function is performed in one of the dedicated sub-areas in the second part with an active technique for local fog detection, and in one of the dedicated sub-areas in the first part with passive technique for fog bank detection.

Page 3

- 2. The visual system according to claim 1, wherein the system is installed in a motor vehicle on a front portion of an inner rear-view mirror of the motor vehicle, and wherein additional sub-areas in the second part perform rain detection, windscreen misting detection, and dusk detection, respectively.
- The visual system according to claim 1, wherein the matrix is a linear or logarithmic, monochromatic or color VGA CMOS matrix
- The visual system according to claim 1, wherein at least one of the sub-areas in the first part is designed for front monitoring.
- The visual system according to claim 1, wherein one of the sub-areas in the second part is for rain and misting detection.
- The visual system according to claim 1, wherein one of the sub-areas in the first part is for meeting detection.
- The visual system according to claim 5, wherein the sub-area dedicated to rain and misting detection includes an emitter.
- The visual system according to claim 1, wherein one of the sub-areas in the second part is for a dusk function.
- The visual system according to claim 4, wherein the at least one sub-area dedicated to front monitoring also performs a tunnel function.

Application/Control Number: 10/699,795 Page 4

Art Unit: 2622

12. A visual system, comprising:

a CCD or CMOS color or monochromatic matrix having a sensitive area, and

a plurality of optical devices with different directions, fields of view or modes of optical

separation,

wherein said sensitive area of the matrix is divided into a plurality of separated sub-areas

designed for different specific functions, a first part of said plurality of separated sub-areas being

dedicated to scene monitoring and a second part of said plurality of separated sub-areas being

dedicated to detection of environmental parameters, said division being achieved by said

plurality of optical devices,

wherein a vehicle meeting function is performed by one of the sub-areas in the first part

by using an optical filter laid with a discretization degree at a pixel level.

13. A visual system, comprising:

a CCD or CMOS matrix having a sensitive area, and

a plurality of optical devices with different directions, fields of view or modes of optical

separation,

wherein said sensitive area of the matrix is divided into a plurality of separated sub-areas

designed for different specific functions, a first part of said plurality of separated sub-areas being

dedicated to scene monitoring and a second part of said plurality of separated sub-areas being

dedicated to detection of environmental parameters, said division being achieved by said

plurality of optical devices,

Application/Control Number: 10/699,795

Art Unit: 2622

wherein the matrix has a protection window made of one of glass and transparent plastic, the protection window acting as support for one or more optical fibers and a prism, the one or more optical fibers carrying to selected sub-areas of the matrix an optical signal.

Page 5

- 14. The visual system according to claim 13, wherein said optical fibers have proximal ends fitted into holes made into said protection window.
 - 15. A visual system, comprising:
 - a CCD or CMOS matrix having a sensitive area,

a plurality of optical devices with different directions, fields of view or modes of optical separation, wherein said sensitive area of the matrix is divided into a plurality of separated sub-areas designed for different specific functions, a first part of said plurality of separated sub-areas being dedicated to scene monitoring and a second part of said plurality of separated sub-areas being dedicated to detection of environmental parameters, said division being achieved by said plurality of optical devices, one of said sub-areas in the first part being dedicated to front monitoring and others of said sub-areas in the second part being dedicated to rain, misting, fog and dusk functions, and

an optical insulation between the first and second parts, the optical insulation partially covering a surface of a matrix protection window, on a side towards the matrix, with a layer of absorbing or reflecting material.

17. The visual system according to claim 13, wherein a sub-area dedicated to a rain function receives the optical signal from an optical system comprising, in series, the prism with an optical insulation, a filter and an objective with an optical axis orthogonal to a windscreen.

Application/Control Number: 10/699,795 Page 6

Art Unit: 2622

18. The visual system according to claim 13, wherein a sub-area dedicated to a windscreen misting function receives the optical signal from an optical system comprising, in series, the prism with an optical insulation, a filter and an objective with an optical axis orthogonal to a windscreen.

- 19. A visual system, comprising:
- a CCD or CMOS matrix having a sensitive area, and

a plurality of optical devices with different directions, fields of view or modes of optical separation,

wherein said sensitive area of the matrix is divided into a plurality of separated sub-areas designed for different specific functions, a first part of said plurality of separated sub-areas being dedicated to scene monitoring and a second part of said plurality of separated sub-areas being dedicated to detection of environmental parameters, said division being achieved by said plurality of optical devices, wherein one of the sub-areas in the second part is dedicated to a dusk function and receives an optical signal through an optical fiber.

- 20. A visual system, comprising:
- a CCD or CMOS matrix having a sensitive area, and

a plurality of optical devices with different directions, fields of view or modes of optical separation,

wherein said sensitive area of the matrix is divided into a plurality of separated sub-areas designed for different specific functions, a first part of said plurality of separated sub-areas being dedicated to scene monitoring and a second part of said plurality of separated sub-areas being dedicated to detection of environmental parameters, said division being achieved by said

Application/Control Number: 10/699,795

Art Unit: 2622

plurality of optical devices, wherein one of the sub-areas in the first part is dedicated to tunnel function and receives an optical signal through an objective dedicated also to a front monitoring function.

Page 7

- 21. The visual system according to claim 1, wherein the sub-area dedicated to the fog function, based on the active technique, receives an optical signal through an optical system comprising one of a ball and grin lens, an optical fiber, a high-pass or interferential filter, and a collection lens.
- 22. The visual system according to claim 21, wherein the sub-area dedicated to the fog function, based on the passive technique, receives the optical signal through an objective dedicated also to a front monitoring function.
- 23. The visual system according to claim 13, wherein two sub-areas dedicated to a vehicle meeting function receive the optical signal through filters together with an objective.
- 25. The visual system according to claim 13, wherein a sub-area dedicated to a front monitoring function receives the optical signal through an objective with an optical axis shifted with respect to the center of the matrix.
- 26. The visual system according to claim 1, wherein some sub-areas are reserved for unused pixels to provide separation between used sub-areas."

Allowable Subject Matter

- Claims 1 7, 9, 10, 12 15, 17 23, 25, and 26 (now respectively renumbered 1 5, 7, 6, 8, 9, 13 15, 20, 16, 17, 21, 22, 10, 11, 18, 19, and 12) are allowed.
- The following is an Examiner's statement of reasons for allowance:

Art Unit: 2622

For Claims 1 and 12, the closest prior art discloses a visual system installed on an inner rear-view mirror of a vehicle, wherein the visual system includes an image sensor having sub-areas dedicated to specific functions and the image sensor for use in a vehicle visual system, wherein the image sensor has several sub-areas dedicated to specific functions including front monitoring, and wherein the sub-areas dedicated to front monitoring may also be used for tunnel detection and a dusk function

However, the closest prior art does not teach or fairly suggest wherein a fog function is performed both with a dedicated sub-area, with an active technique for local fog detection, and with passive technique for fog bank detection in another sub-area corresponding to the one dedicated to front monitoring or contained therein or wherein a vehicle meeting function is performed by one of the sub-areas in the first part by using an optical filter laid with a discretization degree at a pixel level.

For Claims 13, 15, 19, and 20, the closest prior art discloses a visual system installed on an inner rear-view mirror of a vehicle, wherein the visual system includes an image sensor having sub-areas dedicated to specific functions and the image sensor for use in a vehicle visual system, wherein the visual system includes a protection housing for supporting a lens system.

However, the closest prior art does not teach or fairly suggest wherein the matrix sensor has a protection window made of glass or transparent plastic, also acting as support for one or more optical fibers and a prism carrying to selected sub-areas of the matrix an optical signal picked up by the prism

 Any comments considered necessary by Applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue Art Unit: 2622

fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance"

Conclusion

Any inquiry concerning this communication or earlier communications from the
Examiner should be directed to Justin P Misleh whose telephone number is 571.272.7313. The
Examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Sinh Tran can be reached on 571.272.7564. The fax phone number for the organization where this application or proceeding is assigned is 571.273.8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Justin P. Misleh/ Primary Examiner Group Art Unit 2622 August 4, 2008